

METHOD AND APPARATUS FOR STERILIZING A LUMEN DEVICERelated Applications

This application is a continuation-in part of Application No. 09/323,610, filed ^{U.S. Patent No. 6,528,015,} June 1, 1999, which is a continuation of Application No. 08/915,922, filed August 21, 1997, now U.S. Patent No. 6,066,294. This application is also a continuation-in part of ^{U.S. Patent No. 6,319,480,} Application No. 09/643,336, filed August 22, 2000, which is a continuation of Application No. 09/105,491, filed June 26, 1998, now U.S. Patent No. 6,174,502, which is a divisional of Application No. 08/833,375, filed April 4, 1997, now U.S. Patent No. 5,961,921.

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Background of the InventionField of the Invention

The invention relates to systems and methods for chemical sterilization of medical devices with lumens, and more particularly to systems with a container having an interface.

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Description of the Related Art

Medical instruments have traditionally been sterilized using either heat, such as is provided by steam, or a chemical, in the gas or vapor state. Sterilization using hydrogen peroxide vapor has been shown to have some advantages over other chemical sterilization processes.

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The combination of hydrogen peroxide with a plasma provides certain additional advantages, as disclosed in U.S. Patent No. 4,643,876, issued February 17, 1987 to Jacobs et al. U.S. Patent No. 4,756,882, issued July 12, 1988 also to Jacobs et al. discloses the use of hydrogen peroxide vapor, generated from an aqueous solution of hydrogen peroxide, as a precursor of the reactive species generated by a plasma generator. The combination of hydrogen peroxide vapor diffusing into close proximity with the article to be sterilized and plasma acts to sterilize the articles and remove residual hydrogen peroxide. However, effective sterilization of articles having long narrow lumens are very difficult to achieve, since the methods are dependent upon diffusion of the sterilant vapor into close proximity with the article before sterilization can be achieved. Thus, these methods have been found to require high concentration of

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